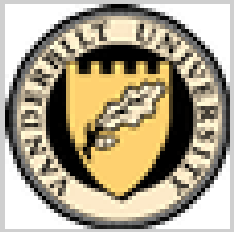

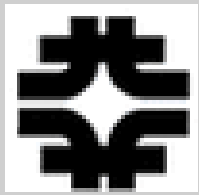

RTES Status

Vanderbilt University

University of Illinois

Outline

- Introduction/Overview
- Status of Infrastructure
- Status of Component Testing
- Status of System/Subsystem Testing
- Discussion & Feedback

Planned Contributions (Repeat)

- System Testing
  - Systematic Testing Processes & Results
  - Automated Execution/Evaluation
  - Integrated, Full-System Test
- General Philosophy
  - Start Small/Simple → Short time to useful results
  - Build Complexity/Scale/Range of Tools
  - Spiral Design Cycle, Driven by CMS Requirements

Resources Available

- Vanderbilt
  - 3 Students
    - Steve Nordstrom, Turker Keskinpala, Abhishek Dubey
  - Staff/PI (Part time)
    - Sandeep Neema, Ted Bapty, Paul Sheldon
- UIUC
  - Mike Haney
- Large Scale Computing Clusters
  - 1400 CPU system + other smaller clusters

Testing Tools

- Specification of Tests → CAD/CASE Tools
  - What to test (System, Configurations, data, etc)
  - How to test (Operations, Sequences, Data Patterns)
  - What to check (expected results,)
- Test Generation → Automatic Synthesis
  - Test Scripts, configurations, …
- Test Runtime Infrastructure
  - Nightly Builds
  - Execute test procedures
    - Components
    - Systems
  - Results Presentation & Archival

Tasks

- ✓ Software Replication: Establish functional System at VU/UIUC
- ✓ Hardware Testbed
  - ✓ Initial: Commodity Cluster Machines (RU → FU)
  - – Intermediate: CPCI Board Integration (FRL)
- ✓ Specify Testing Framework
  - ✓ Initial: Manual, Extending Steve Murray's work, + work with others
  - – Intermediate: Subsystems, Multiple Tools
  - – Final: Integrated Tool
- ✓ Test Generator
  - ✓ Initial: Manual, extending CMS work
  - – Intermediate: Partial Generation:
  - – Final: Fully Automatic
- ✓ Test Runtime Infrastructure
  - ✓ Initial: Small Set of critical Components, Apply Existing Tools
  - – Intermediate: Configuration of Tools + additional testing engines
  - – Final: Mix of custom & public domain tools. Capable of automatic operation

Demonstrations & Plans

- Runtime Infrastructure: NICOS
- Component Testing
- System/Subsystem Testing